ONE CALENDAR FOR ONE WORLD: THE WORLD CALENDAR

VOL. XVI FIRST QUARTER, 1946 No. 1

WHEN it required two weeks to travel from Boston to Washington, when a crossing of the Atlantic took a month or more, and when a journey from the Atlantic Coast to the Orient required a year, the peoples of the world were so separated that they could live their lives largely isolated from one another. Now that we can speak on the telephone to anyone anywhere in the world almost instantaneously, when the radio carries the news of every nation around the globe just as soon as it happens, and when we can fly to the farthest points of the world in a few hours, the international outlook and procedures developed through the preceding years of man's history must be completely changed.

George Bernard Shaw has pointed out that men readily discard obsolescent machinery but cling tenaciously to ideas, no matter how hoary and utterly removed from reality. "We cannot fight ideas with armies," said Georg Brandes. The idea that the world is as it was a century or even a decade ago lacks all relation to present reality. The world has shrunk to a small community in which each nation is the next door neighbor of every other, even to those on the other side of the Earth.

Just as our allegiance is to our nation, even above our state or city, we must now recognize our paramount responsibility to mankind. We have become citizens of the world though we still need to learn the obligations this entails.

The United Nations is the new international organization for what is hoped will be a new and better world. Here is a world structure accepted by the nations allied in the last war. Here is the machinery for joint consideration of world problems. Here is a forum for discussion of the needs of all peoples. Here is the sounding board for the moral conscience of every people. Here is world force controlled by world reason. Here is the way of cooperation between nations as a way of life. Here is peace as the supreme objective of man. Here is the future . . .

The success of U. N. will insure long-needed achievements, including The World Calendar.

The World Calendar Association warmly welcomes U. N. and rejoices that its permanent home is to be in the United States of America.

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ENDORSEMENT BY NEWSPAPER ADVERTISING EXECUTIVES OF UNITED STATES

The Newspaper Advertising Executives Association (NAEA) is one of the most important groups recently to endorse The World Calendar.

THE Newspaper Advertising Executives Association held its convention in Chicago from 14 January to 16 January 1946. The gathering was attended by the Advertising Directors or Publishers of over 600 of America's leading newspapers. Near the conclusion of the meetings and as a climax, the NAEA endorsed The World Calendar as the "answer to a newspaper man's calendar prayer."

Last year a special committee to study calendar revision was appointed by Henry W. Manz, the Advertising Director of *The Indianapolis Times*, then President of the Association. Howard Weaver, the Advertising Director of the *Times Herald* in Washington, D. C., was designated as the Chairman and D. P. Self, Advertising Manager of *The Charleston Daily Mail* of West Virginia, was the Associate Chairman.

After a year of study, the committee unanimously reported it favored a Resolution endorsing The World Calendar and recommended to the Executive Committee that this Resolution be submitted to the membership of NAEA. The Executive Committee agreed.

As a part of the presentation of the subject by the committee, an exhibit was prepared by the promotion department of the *Washington Times Herald*, consisting of some posters with the captions: The World Calendar, A New Calendar for a New World, Fourteen Varieties of the Present Calendar, the Perpetual World Calendar, and a Visual History of Calendar Changes. These charts were in two colors, approximately the size of a full newspaper page. They were displayed with some of the samples of the best merchandising and promotion done by each of the newspapers. Even though they were consequently subjected to strong competition they possessed attention value and proved to have great interest.

An easel presentation, including graphs and charts, had been prepared by the committee for the use of D. P. Self, who was designated the Acting Chairman of the committee and authorized to make its report to the convention. Informal conversations with those attending the convention during its first two days made it apparent that there would be no need for a detailed exposition of the subject, much less of intensive selling, preceding submission of the Resolution. The representatives of the newspapers were clearly favorable to The World Calendar and disposed to endorse it enthusiastically. Robert Drew, now President of the NAEA, and D. P. Self conferred and decided that there was no need to gild the lily and that a short speech, followed by free discussion by the members from the floor, would result in adoption of the Resolution by acclamation.

Apart from offering the Resolution, the special committee on calendar revision also would make some recommendations as to the steps which should be taken by the newspapers and their affiliates not only to acquaint the American public with the subject of calendar reform and the desirability of adopting The World Calendar but also to assume the leadership in shaping public opinion in support of this long overdue reform. These proposals were also to be submitted to the membership for ratification, although they were not to be incorporated in the formal Resolution.

The speech D. P. Self accordingly made was as follows:

"The Committee appointed to study and report to you on the proposed adoption of a stabilized calendar, each year the same, perpetually, and fixing holidays on the same day and date each year, carefully analyzed and ascertained the effectiveness of The World Calendar in relation to newspapers.

"Last September we met to compare opinions, analyze data and otherwise discuss this calendar.

"I am glad to be able to tell you that your Committee unanimously agreed to recommend that this organization pass a Resolution endorsing The World Calendar and to urge that you implement this Resolution by a campaign through your newspapers.

"Newspapers are especially time and calendar conscious. So are transportation lines, communication systems, and radio. To us especially, but also to merchandisers, hotels and others concerned with seasons and holidays, and that includes not only business generally but everyone individually, it would be advantageous were the calendar to be the same every year and holidays to fall on the same day of the week and the same date of the month. Accountants and statisticians need such a basis for true comparative figures.

"As an illustration, in 1942 Christmas came on a Friday and newspapers did not know how to plan their issues for the following Saturday. There was no accurate gauge by which to ascertain how many columns to anticipate; there was no certainty how many stores would be open Saturday. Wild guessing was the result with the consequence that one New York newspaper, with a circulation exceeding one million, discovered to its dismay that not only was its advertising lineage off 65 per cent but it had overprinted 80,000 papers.

"Christmas, 1945, fell on Tuesday; New Year's Day fell on Tuesday this year. Would the preceding Mondays be holidays? Would employees generally have either or both Mondays as a holiday? The uncertainty is doubtless still vividly recalled. A week before Christmas the New York Stock Exchange declared it contemplated closing both Mondays. Two days before Christmas Eve the Exchange announced it would close. In the last minute it decided to be open New Year's Eve. The department stores generally closed New Year's Eve, but were open Christmas Eve. Of course, there's no slightest thought of changing the date of Christmas, but how beneficial it would be if year after year Christmas, 25 December, were to fall on Monday, as it always will under The World Calendar. Incidentally, many other holidays would fall on Monday. Innumerable conferences and widespread confusion will be avoided.

"Before I talk about The World Calendar in detail let me say a word about the history of calendar changes.

"Man has changed his calendar through the ages. The chronology sets it forth succinctly.

"The Egytian calendar was established in 4236 B. C., the Hebrew in 3760 B. C., the Julian in 45 B. C., the Augustan in 8 B. C., the Constantinian in 321 A. D. The Gregorian, our present calendar, dates back to 1582 but it was not adopted by England until 1752, by Japan until 1873, by China 1912, by the Soviet Union in 1918, and by Turkey 1927.

"The world has changed greatly, especially in the last century. The modern world needs a streamlined calendar for our streamlined age and continued advancement.

"What is The World Calendar?

"Probably you have seen the exhibit in the lobby. Briefly, this calendar is based on the fact that 365 cannot be evenly divided. The one day, the 365th day, is treated as a variable under The World Calendar, and not allowed to cause every week, every month, every quarter year, every year to begin and end on different days of the week every year. Accordingly, this variable, odd day is called Year-End World Holiday, or W December,

and falls on the last day of the year, which consecutively would be the old 31 December. Similarly, in leap years, W June would be 31 June, a mid-year World Holiday, every four years.

"By this means The World Calendar has four quarters, approximating the four seasons of the year. Each quarter has 31- 30- and 30-day months. Each year begins on Sunday, 1 January, and ends on Saturday, with the extra World Holiday following. Each quarter begins on Sunday, the 1st, and ends on Saturday. Each quarter is equal in length and contains 3 months, 13 weeks or 91 days. Every month of the year has 26 weekdays plus Sundays.

"The World Calendar has already been approved by 14 nations. During this year of 1946 we expect a bill to be introduced into the Congress of the United States for adoption of The World Calendar by this nation and a recommendation made that our government propose through the United Nations an international agreement for its adoption by the other nations of the world.

"The list of organizations which have approved The World Calendar is long and impressive. It includes Chambers of Commerce, Scientific Bodies, Educational, Business, Religious, Labor, Fraternal and other groups. It is the opinion of your Committee that this Association should take its rightful place in a notable company of leaders by passing a Resolution of endorsement.

"In terms of our own special interest, manifestly it would be very helpful in planning schedules. In the opinion of your Committee, The World Calendar is the answer to the newspaper man's calendar prayer. Hence, your Committee submits a Resolution for adoption:"

RESOLUTION

Adopted by
Newspaper Advertising Executives Association, Inc.

Edgewater Beach Hotel, Chicago
16 January 1946

WHEREAS, The Newspaper Advertising Executives Association, Inc., having given serious consideration and study to the proposal that the present calendar (known as the Gregorian calendar) should be revised and simplified more adequately to fit the needs of the world, and having reached the conclusion that THE WORLD CALENDAR proposed by The World Calendar Association of New York City provides the desired changes:

WHEREAS, the present calendar is undesirable because—

1. It changes every year.
2. Each year begins and ends on a different day of the week.
3. Quarters begin and end on different days of the week and are of unequal length, i.e., 90—91—92—92 days.

4. Months are of unequal length, varying from 24 to 27 weekdays.
5. Days and dates never agree from year to year, causing holidays, anniversaries, birthdays, etc., to wander ceaselessly.
6. The calendar's irregularities preclude comparison of monthly, quarterly, half-yearly and annual periods, and necessitate annual changes in plans, schedules and operations, and holidays are erratic.
7. Unbalanced in structure, unstable in form, and irregular in arrangement, the present calendar is obsolete.

WHEREAS, the perpetual WORLD CALENDAR is desirable because—

1. It is the same every year in perpetuity.
2. Each year begins Sunday, 1 January. Business activities begin with Monday, 2 January. The year ends on an extra day, the Year-End World Holiday.
3. Quarters are equal in length and correspond approximately to the seasons, each quarter begins on Sunday, ends on Saturday, and contains 3 months—13 weeks—91 days.
4. Every month has 26 weekdays, plus Sundays.
5. Holidays, anniversaries, birthdays, etc., always fall on the same day and date every year.
6. This revised calendar facilitates accurate comparative statistics and tables, computations of interest, budgets, pay rolls, costs, and the like; it simplifies operating schedules, and timetables, and is a great convenience in the observance of holidays.
7. Balanced in structure, stable in form, and regular in arrangement—THE WORLD CALENDAR is a modern calendar to meet modern needs.

NOW, THEREFORE, IT IS RESOLVED that THE WORLD CALENDAR be adopted by the United States of America.

A copy of this resolution shall be sent to The World Calendar Association, 630 Fifth Avenue, New York City, New York.

A copy of this resolution shall be transmitted to the members of the Newspaper Advertising Executives Association, Inc., to the American Newspaper Publishers Association and other NAEA Affiliated Associations, and the American Standards Association.

A copy of this resolution shall be transmitted to the President of the United States, to members of the Cabinet, and to members of the House of Representatives and the Senate in the Congress at Washington, D. C., with the request that they take appropriate and necessary steps for the adoption of THE WORLD CALENDAR by the United States of America, and further that they instruct the representatives of the United States to present it to the United Nations for adoption by the member states thereof.

The undersigned President and Secretary of the Newspaper Advertising Executives Association, Inc., do hereby certify that the above resolution of endorsement was duly adopted at a regular meeting held on the 16th day of January, 1946, in the City of Chicago, State of Illinois.

(*signed*) *Robert K. Drew,*
President

(*signed*) *Irving C. Buntman,*
Secretary-Treasurer

The speech and reading of the Resolution were well received and, when President Drew, as Chairman of the meeting, invited discussion, only two persons rose and they did not address themselves to the merits of the calendar but simply raised the question as to whether action should be deferred until the publishers and other organizations of the newspaper

publishing business acted first. The vote was vociferously overwhelming in favor of the Resolution to endorse The World Calendar. Quoting the report in *Advertising Age* on 21 January 1946: "The only sign of conflict came at the day's cessation when two or three members opposed a resolution urging that newspapers promote adoption of The World Calendar. The opposition was so unexpected it caused a round of laughter."

In New York, Miss Elisabeth Achelis, President of The World Calendar Association, upon being informed of the action taken, said: "In November, 1883, American and Canadian railroads adopted Standard Time. The International Meridian Conference in Washington, D. C., followed in 1884 and Standard Time was later adopted by other countries. American industry, not government, blazed this trail of simplified time reckoning. Acceptance and governmental ratification were greatly aided by the newspapers of the United States in 1883, which carried interesting accounts of the history of Standard Time.

"Now the press of the United States has initiated steps to conduct a vigorous campaign to educate the public to the advantages of The World Calendar. With such support of The World Calendar favorable opinion in the United States is expected and we look forward confidently to enjoying the benefits that will accrue to everyone. Once more the American press is rendering a great public service."

ENDORSEMENTS BY ASTRONOMERS

A RESOLUTION was adopted at the regular meeting of the *Winnipeg Centre of the Royal Astronomical Society of Canada* on 9 January 1946. This "expressed approval in principle of an improved Calendar, perpetual in nature, with twelve months and equal quarters." It recorded the opinion that "such a calender would . . . facilitate the smoother operation of government, business, labor and education," and that, "world-wide adoption of The World Calendar would contribute toward international unity." The Resolution concluded with the words, "to encourage adoption of the improved World Calendar in the Dominion of Canada, effective the first day of January 1950."

THE *Edmonton Centre of the Royal Astronomical Society of Canada* at its regular meeting held on 14 March 1946 endorsed "calendar reform in general and the proposed improvement known as The World Calendar in particular."

In the preamble to the resolution formally adopted, the opinion was expressed that adoption of The World Calendar "would be a logical and progressive move, and one which would eliminate the irregularities and eccentricities found in the present unbalanced Gregorian Calendar which present many inconveniences to the smooth operation of business, finance, government and law, as well as to labor, agriculture, science and education."

The belief was also expressed that "world-wide adoption of a uniform and perpetual Calendar, with the one or two days in excess of an even 52 weeks being set aside as World Holidays, would contribute toward international unity."

ENDORSEMENTS BY ORGANIZATIONS

A few of the many organizations of all nations which have passed Resolutions of Endorsement.

CHAMBER OF COMMERCE

Federation of Chambers of Commerce of the British Empire
Association of British Chambers of Commerce
New York State Chamber of Commerce
St. Louis Chamber of Commerce
Coffeyville, Kan., Chamber of Commerce
Galveston Chamber of Commerce
London Chamber of Commerce
National Chamber of Trade (English)
Board of Trustees, Retail Trade Bureau, Portland, Ore.
Pittsburgh Chamber of Commerce
Junior Chamber of Commerce of Pittsburgh
Danville, Ky., Chamber of Commerce
Lancaster, Pa., Chamber of Commerce
Cumberland, Md., Chamber of Commerce
Chillicothe, Mo., Chamber of Commerce
Hagerstown, Md., Chamber of Commerce
Chicago Association of Commerce
Hibbing, Minn., Chamber of Commerce
Independence, Kan., Chamber of Commerce
Olean, N.Y., Chamber of Commerce
Council of Board of Trade, Halifax, Nova Scotia
Bradford Chamber of Commerce (English)
Nottingham Chamber of Commerce (English)
Wolverhampton Chamber of Commerce (English)
Dewsbury Chamber of Commerce (English)
Gloucester Chamber of Commerce (English)
Plymouth Chamber of Commerce (English)
Winchester Chamber of Commerce (English)
Ipswich Chamber of Commerce (English)
Stroud Chamber of Commerce (English)
Woolwich Chamber of Commerce (English)
Luton Chamber of Commerce (English)
Mansfield Chamber of Commerce (English)
Reading Chamber of Commerce (English)
Londonderry Chamber of Commerce (Irish)
Hitchin Chamber of Commerce (English)

Chester Chamber of Commerce (English)
North Wales Chamber of Commerce (British)
Austrian Board of Trade

SCIENCE

International Astronomical Union, Commission 32
American Academy of Arts and Sciences
Committee for Maritime Meteorology
Seventh American Scientific Congress, Mexico City
American Philosophical Society
American Association for the Advancement of Science
Mathematical Assocation of America
South Carolina Academy of Science
East Bay Astronomical Assn., Oakland, Cal.
Barcelona Academy of Arts and Sciences, Spain
Faculty of the School of Industrial Engineers of Barcelona, Spain
Ninth General Chilean Scientific Congress, Valparaiso
Institute of Radio Engineers, Board of Directors, N.Y.C.
Academy of Science of St. Louis
Astronomical Society of Decatur, Ill.
Astronomical Society of Spain and America
American Psychological Association
Assn. of Professional Engineers of the Province of New Brunswick
Engineering Profession in British Columbia
Australian Branch of the Institute of Physics
Detroit Astronomical Society
National Institute of Planning and Social Reform of the Republic of Cuba
Toronto Centre, Royal Astronomical Society of Canada
Winnipeg Centre, Royal Astronomical Society of Canada
Edmonton Centre, Royal Astronomical Society of Canada

EDUCATION

World Federation of Education Associations
National Education Association
National Association of Education of Chile
Assn. of Teachers of Mathematics in New England
Texas State Teachers Association
National Council of Geography Teachers
Faculty Science Club, W. Mich. Coll., Kalamazoo

BUSINESS

International Affiliation of Sales and Advertising Clubs
American Institute of Accountants

American Industrial Bankers Association
Canadian Retail Federation
California Drycleaner's Association
Milwaukee Society of Accountants
Pennsylvania Retailers Association, Lancaster
Manufacturers' Assn. of Delaware County, Chester, Pa.
Kansas City Branch, Railway Mail Association, Mo.
Mexican Hotel Association
Industrial Association of Austria
Newspaper Advertising Executives Association, Inc.
Johnstown, Pa., Advertising Club
Associated Employers of Oregon
Family Finance Corp. and Security Bankers Management Corp., Wilmington, Del.
Book Dealers Association of Austria
Merchants Association of Austria
National Cooperative Organization of Small Trades (Austrian)
Association of the Restaurant and Hotel Trades (Austrian)

RELIGION

General Convention of the Protestant Episcopal Church
College of Bishops of the Methodist Episcopal Church South
Reformed Church in America
Council of the Universal Christian Council for Life and Work, Chamby, Switzerland
American Lutheran Church
Evangelical Lutheran Synod of Missouri, Ohio and other States
Council of Bishops of the Methodist Church
Suffolk North Assn. of Ministers, Mass.
Olivet Presbyterian Church, Harrisburg, Pa.

LABOR

American States Members of International Labor Organization
Labor Conference, Santiago, Chile, 1936

FRATERNAL

Presidents' Section of the National Fraternal Congress of America
Fraternal Congress of New York
Fraternal Congress of Maryland and the District of Columbia
Annual Report of the Secretary-Treasurer of the Canadian Fraternal Congress
Washington State Fraternal Congress

MISCELLANEOUS

General Federation of Women's Clubs
National Federation of Business and Professional Women's Clubs, Inc.
Women's City and County Club, Inc., Poughkeepsie, N.Y.
National Story League
Peoples Mandate Committee for Inter-American Peace and Cooperation
Penryth Club, Toronto, Canada
Amateur Athletic Union of the United States
National Theatre Conference
Agricultural History Society, Washington, D.C.
Hibbing, Minn., Kiwanis Club
Williamsburg (Brooklyn) Kiwanis Club
West Chester, Pa., Lions Club
Ventura, Cal., Lions Club
Ephraim, Utah, Lions Club
Sandersville, Ga., Lions Club
Wooster, Ohio, Lions Club
Hayward, Cal., Lions Club
Port Neches, Tex., Lions Club
Camden, Tenn., Lions Club
Pittsburgh, Pa., Lions Club
Palatine, Ill., Lions Club
Chelsea, Mass., Rotary Club
Devils Lake, N.D., Rotary Club
Yoakum, Tex., Rotary Club
Johnstown, Pa., Rotary Club
Akron, Ohio, Toastmasters Club
Jacksonville, Ill., Toastmasters Club
National Council for the Promotion of Father's Day, N.Y.C.
Humanist Society of Friends, Los Angeles
Portales, N.M., 20-30 Club

and others

COMMODORE J. F. HELLWEG

THE United States Naval Observatory at Washington has long been preeminent in this nation as the final authority on time. It has also wielded great influence in astronomical circles all over the world. Much of this is to be attributed to the Superintendent who brought to it the tang of the sea, the vigor of a sailor, the force of a strong personality. Commodore J. F. Hellweg has now been retired. His long services to the nation as an officer and the imperishable position he occupies in the history of calendar revision by reason of his strong advocacy of The World Calendar richy entitle him to the traditional accolade of the United States Navy: "Well done."

THE RIGHT CULMINATION

By Elisabeth Achelis, President, The World Calendar Association

In the last issue of the* Journal *there appeared an article stressing the value of the right beginning. This sequel is an equally important contribution to the philosophic thought of calendar revision.

EACH year, each half and quarter-year, and each week begins on a Sunday in The World Calendar. A previous article expressed the belief that this is the only right way to begin these divisions of the year. The beginning is important, and, equally so, is the culmination. Together they constitute a happy balance. A good beginning is conducive to a good ending.

No finer example of this can be found in literature than the first two chapters in Genesis of the Bible. The story of the creation of the universe commences with "In the beginning God created the heaven and the earth." Day follows day harmoniously, each day to its own work, concluding with the seventh day as a day of rest: a reward for labor well done.

This may have been the origin of the week, beginning on the first day, Sunday, and ending on the seventh or last day, Saturday. This last day, or day of rest, in Biblical times was called the Sabbath, a name still used by Jews and some other groups.

In the story of creation, man did not inhabit the Earth until the sixth day or period, so that when the seventh day or period was established, he was already living on Earth. Did man, then, have something to do with the seventh day, its interpretation and significance? Interpretations may vary, but we do know this: According to the Bible, on the fourth day of creation the days, seasons and years (which we record by the calendar) were fashioned by God. Created in the image and likeness of God, man doubtless was given free will to observe the Sabbath as he deemed best. The Bible later specifically states that "The Sabbath was made for man, and not man for the Sabbath."

No further mention of the Sabbath or its observance can be found in Genesis after the creation. This day appears to have slowly attained its significance, seemingly in the days of Moses.

The seasonal year and days were again emphasized after the flood.

There is another theory, a scientific one, that the week originated with the four phases of the moon, each phase taking seven days.

The earliest known calendars were based on the moon. Difficulties immediately arose. It takes the moon about 29½ days to complete one cycle from one new moon to the next new moon. How, then, was the moon to be reckoned with so that it could be of use in the recording of time? Man gave to the moon-periods (months) alternate 29 and 30 days. Every month was actually either a half-day too short or too long, but for practical purposes he had found a solution.

At first, the moon calendar had but one, two, three or six months, until finally it contained 12 months. With the discovery of the Metonic cycle in 432 B. C., the moon-calendar gradually developed into a moon-sun calendar so as to agree more accurately with the seasons: an additional 13th (moon) month was added to the 12-month moon-year seven times, interspersed within a period of 19 moon-years, approximating 19 sun-years. This is a complicated calendar system and used primarily by the Hebrews for their religious worship and feast days. For civil life and daily affairs it has been replaced by the Gregorian calendar.

It may be interesting to note here that the moon is an earthly luminary and affects the Earth alone. It influences the weather, the tides, and the growth of vegetation. It is restricted in scope to our planet.

It was the Egyptians, dependent upon the rising and falling of the Nile for sustenance, who realized the importance of the seasons and made these the bases of the sun-calendar. Thus the seasonal sun-year became the central time-unit. But here, too, a difficulty arose, for how was the 365¼-day year to be used in a practical manner? Again ancient man undertook to solve the seemingly insolvable problem.

At first, the sun-calendar had a year of 12 months or 360 days, with five days placed at the end of the year as festival days under the control of the priesthood. The quarter of a day, even though it was known, was ignored in the calendar. Later, the Romans rearranged the sun-calendar, retaining the 12 months but apportioning the 365 days of the year more evenly throughout the months. The quarter-days were withheld until they had reached a full day, when it became the additional 366th day in leap years. By this method the calendar agreed with the seasons. Thus did man use his free will and intelligence to adjust the calendar to the immutable laws of nature devised by the Creator.

Now, man recognizes that the sun influences the day and the seasons and is the central force and focal point of the solar system within which the Earth, with the other eight planets, revolves in regular order. Thus the sun offers a broad outlook, which probably is the reason the sun was called the greater and the moon the lesser light in the Bible. In the past,

we have been prone to refer the difference in degree to the difference in size only.

Many centuries later, in 321 A. D., the seven-day week was officially introduced into the sun-calendar, and once again a difficulty confronted man.

The seven-day week newly introduced into the civil calendar in no way fits in with the annual 365-day year and the occasional 366-day leap year. The week, always a day short to complete the year, wanders aimlessly throughout the year, so that there is unceasing conflict between the year and the week. The present calendar is the unhappy victim of this silent persistent struggle whereby days and dates never agree and nothing dovetails.

The most amazing adjustment ever made might be ascribed to the Gregorian reform, when ten days were dropped from the calendar in order to correlate it with the seasons. It was essentially a scientific reform. Thursday, 4 October, was followed by Friday, 15 October, without an apparent break in the week. This was an illusion, however, for upon closer scrutiny one full week and three days were lost in the year of adoption, 1582. The loss included two Fridays, two Saturdays, two Sundays. one Monday, one Tuesday, one Wednesday and one Thursday. The year of 1582 had but 50 weeks and five days and *not* the regular 52 weeks with its one day.* It was drastic, but effective. Although it called for some sacrifice, man's ingenuity overcame a seemingly impossible obstacle and our entire life has been benefited by this wise and necessary adjustment.

Man, today, with his free will and wisdom, is more capable of solving the difficulty of stabilizing the calendar of 365 and occasionally 366 days than was early man.

The calendar is a definite scientific instrument of time for every-day use. It is ably revised by The World Calendar with its culminating day, the Year-End Day, at the close of every year—and an additional Leap-Year Day in the mid-year of the leap years that balances and further stabilizes the calendar.

In this way The World Calendar, of 12 months and equal quarters, as indicated, always begins on a Sunday, the right beginning for every year, every half and quarter-year, and every week. These right beginnings lead naturally to the right endings of every year, every half and quarter-year, and every week on a Saturday. But here again is the rub. This 364-day year, with its four equal quarters (each quarter of 91 days or 13 weeks or 3 months) and the 52 seven-day weeks, are all *short* one day

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* "Astronomy, Religion and The World Calendar," by Commander William A. Mason U.S.N. (Ret.), *Journal of Calendar Reform*, Vol. 15, p. 173.

of the required 365 days and two days in leap years. The 365th and 366th days, however, are the "must" days in order to keep *every year* in step with the seasons. Any other device is a subterfuge, evading the issue.

As man solved previous calendrical difficulties, so modern man, using common sense, intelligence and accumulated wisdom from past experience, in this day and age has found the solution by which the calendar can be stabilized and the various time-units all agree, and become coordinated. The solution is the reward that inevitably follows right beginnings and right procedures. The Sunday and the Saturday are the beginning and ending of every week, every quarter and half-year, and every year; the year is then completed by the Year-End Day, the *culminating* World Holiday, which interferes with no sacred, scientific or natural law.

We have seen in the former Julian and Gregorian reforms that the extra leap-year day solved the quarter-fraction of the day in the length of the year. In The World Calendar the extra Year-End Day solves the indivisible extra 365th day.

These new World Holidays are the *stabilizing* days which keep The World Calendar balanced and steady in its charted course for the recurring years. Vehicles moving on four wheels have a small concealed fifth wheel to keep them steady. Similarly the gyroscope on airplanes acts as a stabilizing instrument which keeps the plane balanced and steady. Stability is of such importance that the calendar can no longer be tolerated in its present unstable form.

In the economic field, for instance, the former week of six days of work is being reduced to five. The five-day working week may well presage new conditions, where all things are being made new and even man is changing in this new age upon which we are entering.

The five-day working week intrenches more firmly than ever the seventh or last day, Saturday, as a day of rest, relaxation and recreation, and religious observance by some groups, and the first day of the week, Sunday, for prayer, guidance and worship. The right beginning and the right ending emerge gloriously, linked and balanced by the World Holiday.

For the first time in calendar history there is achieved, through The World Calendar, perfect coordination, stability and equality among all the various time-units. No single unit, such as the week or month, is more sacrosanct or important than another. Each of the seven days is given equal value, whether they are days of work or of rest. Without them, our world would not be as we know it. These days are essential toward shaping and completing the whole world for a fitting habitation of man.

The keys to the problem of standardizing the calendar—similarly as the calendar was amended to fit the seasons in the sixteenth century, and our

clock was standardized more recently within the nineteenth century—are the World Holidays, the steadfast anchoring days which keep The World Calendar balanced, ordered and perpetual.

Reference has been made to the story of creation with which the Bible begins and its emphasis on time. The Bible also ends with time in its closing chapter, the tweny-second of Revelation also known as the Apocalypse:—"the tree of life, which bore twelve manner of fruits, and yielded her fruit every month: and the leaves of the tree were for the healing of the nations."* Here are recognized the 12 months of the year and the full flowering tree with its leaves, healing and blessing mankind. In a like manner, symbolically speaking, The World Calendar has 12 months with the Year-End Day, the World Holiday healing and uniting man.

The previous chapter of Revelation describes a vision of the holy city of Jerusalem built foursquare, with each of its four sides facing the cardinal points of the compass, each of the four walls having three gates and "the length and breadth and the height were equal." The World Calendar similarly has four equal quarters, with three months in each quarter approximating a season, all equal as to length and breadth, and all are thus balanced. The Biblical prophecy in its relation to time approaches fulfillment—"for the time is at hand."

The World Calendar, with its right beginning and its right ending, and its universally observed World Holidays, functions beyond the confines of any restricted nationalism, narrow sectarianism, group or individual. As a true welder of nations and peoples it belongs to all races, creeds and nations. The purpose and spirit of The World Calendar are to give man a better calendar that will stimulate greater world unity, cooperation and service. It is an inspiration and it shall prevail.

INTER-RACIAL PRESS

THE publishers of most of the foreign language newspapers located in New York City, the most cosmopolitan city in the world, as members of the Inter-Racial Press, met for luncheon at the Yale Club on Monday, 18 March 1946. Had they spoken their native language the gathering would have been a veritable Babel. They constituted a virtual United Nations. Dr. Nathan H. Seidman, President of the Inter-Racial Press, presided.

Miss Elisabeth Achelis, President of The World Calendar Association, was the guest of honor. She spoke about The World Calendar in terms of the needs and hopes of the peoples of all nations and emphasized that they should have one calendar that would wield a uniting influence.

Westy Egmont spoke about The World Calendar as a practical time-table for the practical needs of a practical world.

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* Also read *The Modern New Testament*, translated from the Original Aramaic Text by Dr. George M. Lamsa.

THE JULIAN DAY

By Commander William A. Mason, U.S.N. (Ret.)

The Civil, Astronomical and Julian Days are here contrasted and discussed in relation to the calendar.

THE historian, in his search for factual data, find himself confronted with a veritable maze of conflicting chronology—eras, epochs and cycles—to say nothing of a multitude of calendars—Lunar, Solar, Luni-Solar and otherwise.

The astronomer, like the historian, is equally concerned with dates which may be centuries apart and recorded by different peoples in different countries who use different varieties of calendars. This situation is rendered more difficult by the well-known vagaries of the various calendars, plus the inevitable confusion caused by long and short years, intercalary days and months, changes in the number of days per month and changes from one calendar to another.

There is an anomaly in all B. C. dates, as in the common system of chronology there is no year 0. The year following 1 B. C. was 1 A. D. Astronomers who are forced to use early dates are apt to insert the year 0 to render their calculations less difficult.

Many dates in early history can be recovered and events verified if they be accompanied by some such celestial phenomenon as an eclipse of the sun or moon.

The noted historian, Joseph Justus Scaliger, found himself confused and misled in his researches by incorrect assumptions due to errors made in chronology. He decided to correct this situation and accordingly, in 1582, he devised and proposed a new system of chronology known as the Julian Period, which he dedicated to his father, Julius Caesar Scaliger.

The Julian Period consists of 7980 (28 x 19 x 15) Julian Years, each containing exactly 365¼ days. It has for its starting point or Epoch *noon* of 1 January 4713 B. C. This date was not chosen arbitrarily but marks the beginning of three important astronomical cycles, the Roman Indiction, and the Solar and Lunar cycles, and the Julian Day is the number of days that have elapsed since that time. This plan was proposed as a universal harmonizer of the different systems of chronological reckoning then in use, and its adoption has brought order out of confusion.

This simple scheme satisfies both the historian and the astronomer and it is extensively employed in astronomical calculations, the date of any

phenomenon being expressed beyond any ambiguity either by the Julian Year and Day, or more simply as Day number so and so of the Julian Era. Such a designation is clear and definite to every astronomer, be he American, Russian, Hebrew, Mohammedan or Chinese.

When the number of days between two events is required, especially if the dates are widely separated, it is easier to set down the dates in terms of the Julian Day and simply take the difference between them.

The *American Ephemeris and Nautical Almanac* contains a table from which the Julian Day Number of any date is readily obtained. For instance, the year 1946 A. D. corresponds to Year 6659 of the Julian Period, and the date 1 January 1946 is Julian Day Number 2,431,821.5.

Considerable controversy has taken place in the past over the question: "When does the day begin?" Should we, for example, reckon the beginning of the day from midnight or from noon? Possibly the time of sunset or sunrise would seem proper to some. In nearly all Lunar calendars, the dark of the Moon was the turning point. The Hebrews still adhere to the Biblical injunction relative to—"the evening and the morning were the second day," and their ritual still keeps this division and begins the Sabbath at the sunset hour. In early Rome the merchants and the lawyers, the tax collectors and the artisans found that a day commencing at midnight was far more convenient. Another class of people were as important as the lawyers and merchants and as powerful as the priests. The astronomers were consulted almost as much as the law makers. Astronomers, like owls, do their best work in the dark, and for them it was far more convenient to commence their day at noon. Then, when they were busy with their observations, it would not be necessary to turn over a new page of their almanacs. The astronomers, therefore, recognized another kind of day, the Astronomical Day.

The Astronomical Day commences at *noon* of the Civil Day of the same date and comprises 24 hours, reckoned from 0 to 24, from noon of one day to noon of the next. It will be observed from this that the Civil Day begins 12 hours before the Astronomical Day of the same date, and a clear understanding of this fact is required when interconverting these times. For example: 1 January 1946 at 2 A. M. Civil Time is equivalent to 31 December 1945 at 1400 Astronomical Time, for it will be observed that the Civil Day was already 12 hours on its way before the beginning of the Astronomical Day, hence 12 hours must be subtracted from the Civil Time to obtain the Astronomical Time.

This double day procedure continued until 1925 to the everlasting confusion of all students of navigation who were thus compelled to convert their Civil date and time into an Astronomical date and time before en-

tering the *Nautical Almanac* to obtain the required data. Common sense finally prevailed over the pleas of the astronomer and on 1 January 1925 the nautical almanacs appeared with the data tabulated in terms of Civil Time. The Astronomical Day and Astronomical Time were discarded—forever, we hope!

The dropping of Astronomical Time and the Astronomical Day left the Julian Day Number undisturbed, for it was unthinkable that this simple plan of chronology should be altered in any respect. We therefore find that this reminder of the Astronomical Day is still very much with us and it would be well for the uninitiated who sets out to convert a Julian Day Number into a Civil Day date or vice versa first to acquaint himself with the difference between these two quantities.

The *Nautical Almanac* tabulates for each year a calendar in which is indicated the day of the month, together with the corresponding day of the year, the fractional part of the year which has elapsed, the day of the week and the Julian Day Number. An inspection of the Julian Day Number data will indicate the 12-hour difference between the Civil date and the Julian Day. For instance—1 January 1946 (Civil Day) is Julian Day Number 2,431,821.5, thus indicating that there is .5 days difference between the two days.

A consideration of the above facts will make it immediately evident that one cannot compare a calendar (Civil) date with a Julian (Astronomical) Day until the former has first been converted into terms of Astronomical time. The *Nautical Almanac* gives directions for such procedure in table IX and prefaces its description with the following injunction:

"To obtain the Julian Day Number for any date . . . *express the date astronomically.*"

The adoption of The World Calendar will in no way affect the Julian Day, for the astronomers will continue to list each astronomical date by its Julian Day Number for their own purposes, thus making them independent of the calendar no matter what its form may be. The British Astronomer Royal expresses the views of the astronomer as follows:

"The astronomer can work independently of any calendar—he would still continue to use this reckoning (Julian Day) because of its great advantages for his special needs, if The World Calendar were adopted."

The Superintendent* of the United States Naval Observatory states:

"The adoption of the proposed World Calendar, or any calendar, would have absolutely no effect on the value of the Julian Day"; also: "If any objection to calendar change is raised by astronomers, it will not be on account of the Julian Day."

*EDITOR'S NOTE: Commodore J. F. Hellweg, Superintendent for 15 years, now retired.

EVOLUTION OF THE CALENDAR

By Dr. F. W. Schlesinger, Director, Adler Planetarium and Astronomical Museum, Chicago, Illinois

An unusually attractive booklet titled* Calendars, Old and New *was published by the Adler Planetarium. Its distinguished Director wrote the contents and consented to publication in this periodical.

MANY different kinds of calendars have been used in the past, and several different types are in use at the present time. All of these are astronomical in their origin, that is, the units of time which they employ are derived from astronomical motions—the motions of the Earth and the Moon. The turning of the Earth on its axis gives us our fundamental unit of time, the day. The annual revolution of the Earth around the Sun, which is one of the causes of the seasons, gives us another period, the year. The revolution of the Moon around the Earth and the resulting phases of the Moon give us a third, the month. The history of the calendar is the history of man's attempts to fit these various units together in such a way as to give the most practical and useful calendar.

These three units of time differ from the various units in other systems of measurement in a fundamental way. They are natural units whose values cannot be changed by man, while our other units are artificial ones whose values can be changed at will to make them fit as we please. Thus we have exactly 12 inches in one foot with no fractions left over, exactly 16 ounces in one pound, and exactly 100 cents in one dollar. We could change any of these relations at will by passing appropriate laws and regulations. Thus the number of inches in a foot could be changed to ten or any other number, but we cannot change the number of days in a lunar month, that is, the number of days required for the Moon to go once through its phases; nor the number of days in one year; nor the number of lunar months in a year.

Among the great variety of calendars there are three principal types: the luni-solar calendar which tries to keep step with both the Sun and the Moon, the lunar calendar which keeps step with the phases of the Moon

only, the solar calendar which keeps step with the Sun or the seasons. All three of these types were in use in very ancient times. The luni-solar calendar was developed at least as early as 3500 B. C. among the Sumerians along the Tigris-Euphrates valleys. With them the year ordinarily consisted of 12 lunar months. The length of the month was determined by actual observation of the Moon. Toward the end of each month, observers watched the western horizon for the thin crescent moon which is first seen in the west two or three nights after the new moon. The appearance of this crescent was the signal to start a new month. Obviously it was not necessary to know the period of the Moon's phases with any high degree of accuracy when using this scheme. This period is a little more than 29½ days (29 days, 12 hours, 44 minutes). This would be the average length of the month in such a calendar, and 12 such months would total about 354 days. We know that a year of the seasons is about 365 days long, hence the year of this calendar was about 11 days or about one-third of a month too short. To make up for this defect the Sumerians inserted an extra month about every third year to get the calendar back in step with the seasons.

This calendar was inherited from the Sumerians by the Jews and the Persians, and is still in use today as the Jewish religious calendar. Instead of inserting the extra or intercalary month whenever the circumstances seemed to make it necessary, the Jewish calendar has had a definite rule concerning this ever since the year 358 A. D. The months are alternately 29 and 30 days in length, and extra months are inserted at the end of the 3d, 6th, 8th, 11th, 14th, 17th, and 19th years of a 19-year cycle. The year can be 353, 354, 355, 383, 384, or 385 days in length. This is obviously not a good calendar for commercial purposes, but is a good example of the luni-solar calendar. In the long run this calendar stays in step with the seasons very nicely since the average length of the year is only about two minutes wrong.

Some of the ancient calendars were strictly lunar, that is, they made no effort to keep the length of the year in step with the seasons. Such a calendar is still used by the Mohammedans. Before the time of Mohammed, the Arabs used a calendar similar to that of the Jews, but Mohammed instituted a strictly lunar calendar of 12 months alternately 29 and 30 days in length. Of course this year is about 11 days shorter than that of the seasons and this calendar behaves like a clock running fast, gaining about one month every three years, and about one year every 33 years. If we began to use such a calendar today, in 1961 the calendar would say January at the beginning of summer.

The third type of calendar was developed very early in the civilization of the Egyptians. Their culture was chiefly agricultural, and was greatly

influenced by the behavior of the River Nile. Each year this river overflows its banks, flooding the surrounding country and depositing there the rich mud and silt which has made this region so fertile. After the waters have receded, the Egyptian farmers plant and harvest their crops. So important was this cycle to them that the early Egyptians (4300 B.C.) recognized only three seasons which they called: "Inundation," "Coming Forth," and "Harvest." The Nile floods are caused by precipitation in the mountains far to the south, mountains whose existence was not known to the Egyptians, and hence it was necessary for them to develop a calendar which would keep step with these seasons.

They were able to measure the length of the year with considerable accuracy placing it at 365 days, about one-quarter of a day short of the true value. In 4236 B. C. they abandoned the moon-month, and adopted a year of twelve 30-day months, with at the end of the year a period of five feast-days which were not part of any month. About 500 B. C. the Chaldeans had determined the length of the year to be 365 days, 6 hours, 15 minutes, 41 seconds. This is less than half an hour wrong, the true value being 365 days, 5 hours, 48 minutes, 46 seconds. Later on, about 300 B. C., the priests in Egypt under the Ptolemies made use of this value, and introduced the idea of leap year into their calendar, adding one extra day each fourth year so that the average length of the year would be 365½ days, only about 11 minutes in error. This was the beginning of our calendar, although we did not receive it directly from the Egyptians, but in a roundabout way through the Romans.

The early Roman calendar was of the luni-solar type like the Jewish calendar, but there were no regular rules about when the extra months should be inserted to keep the calendar in step with the seasons. It was up to the authorities to see that an extra month was inserted whenever the calendar had become a month fast. There was a good deal of carelessness about this, and occasionally the calendar became the tool of the politicians who sometimes added extra months to the year to extend their terms of office! When Julius Caesar came to power the calendar had been so poorly managed that it was a whole season wrong, that is, the calendar indicated the beginning of spring when it was really the beginning of winter. Caesar saw the necessity for improvement and the great advantages to be gained by having a uniform administration of the calendar throughout the Roman Empire, and so he decided to construct the best possible calendar. He called the astronomer Sosigenes from Alexandria in Egypt for advice and assistance, and the two men designed what we now call the Julian calendar. This new calendar came into use in the year 45 B. C.

The average length of the year was made 365¼ days. To accomplish this, every fourth year had 366 days while the others had 365, and it was believed that this would keep the calendar in step with the seasons always. Thus we see that our leap year was introduced into the calendar nearly 2,000 years ago. The Moon was discarded entirely, and, instead of keeping step with the phases of the Moon, the months were made one-twelfth of a year in length. Since 365 is not divisible by 12, it was impossible to make the months of the same length, so the days were apportioned among them as follows:* Januarius 31, Februarius 29, Martius 31, Aprilis 30, Maius 31, Junius 30, Quintilis 31, Sextilis 30, September 31, October 30, November 31, and December 30. We shall see some further changes presently which take care of the differences in month names and length between this calendar and our own. The extra day in leap year was added to Februarius. To bring the calendar again into step with the seasons, the year 46 B. C. was lengthened to 445 days so that in 45 B. C. the calendar indicated 24 March at the beginning of spring. This year came to be known as "the year of confusion," and it is easy to see the reason. About a century before the time of Caesar, another change had been made. The official beginning of the year had been shifted from its traditional place at the first of Martius (March) to the first of Januarius (January). This explains why the name December, meaning "tenth" is now given to the twelfth month, November meaning "ninth" is now the eleventh month, October meaning "eighth" is now tenth, and September meaning "seventh" is now ninth. Sosigenes suggested that the name Quintilis, meaning "fifth" (then the seventh month) be changed to Julius in honor of Julius Caesar who had brought the new calendar into being. From this name comes our July.

Caesar was assassinated about a year after his calendar was put into use, and those who followed him did not understand his leap-year rule, and inserted a leap year every third instead of every fourth year. Augustus, who succeeded Caesar, saw what was wrong and straightened out the difficulty. When he did so, he had the Senate change the name of the eighth month, Sextilis, (meaning sixth) to Augustus, whence our name August. But the month which Augustus named for himself had only 30 days, while that named for Julius Caesar had 31, and it is said that Augustus' vanity made him change the length of this month to 31 days. The extra day was taken from Februarius, leaving it with only 28 days in an ordinary year. This gave three successive 31 day months: July, August and September, so September was changed to 30, October to 31, November to 30, and December to 31. This accounts for the present arrangement

* EDITOR'S NOTE: See *Journal of Calendar Reform*, Vol. 9, p. 10.

of the lengths of the months, with two 31 day months in succession in two places in our calendar: July and August, and December and January.

There was one important error in the Julian calendar. The length of the year is not, as Sosigenes believed, 365¼ days or 365 days, 6 hours, but as previously stated is about 11 minutes less than this. This was of no importance at first, but as the centuries passed, the accumulated error became larger and larger. The error amounts to one day every 128 years, or about 8 days every 1000 years. After 1600 years, the calendar was nearly two weeks wrong, indicating 11 March instead of 24 March at the beginning of spring. The church became interested in this error because of its effect on the date of Easter. At the Council of Nicea in 325 A. D. a rule for determining the date of Easter was adopted. According to this rule, Easter was celebrated on the first Sunday following the first calendar full moon after the beginning of spring. However, the date of 21 March was taken as the beginning of spring, and not the actual beginning as determined from the motion of the Earth in its orbit and the resulting apparent motion of the Sun among the stars. As we have seen, in the 16th Century the calendar indicated 11 March when spring began, hence 21 March and Easter came ten days too late with respect to the real seasons. If the error had been allowed to go on uncorrected, in time Easter would have come in summer instead of spring, then in autumn, and still later, in winter. To keep Easter in its traditional place at the beginning of spring, it was necessary to change the calendar, and Pope Gregory XIII called together a commission to design a new calendar. This new Gregorian calendar which we use today, contains two important changes. The leap-year rule was changed in 1582 so that there would be 97 instead of 100 leap years every 400 years. The leap years are determined as follows: the number of the year is divided by four, and if there is no remainder, that year is a leap year unless it is a century year like 1900; then it must be divisible by 400 without remainder. Thus 1700, 1800, and 1900 were not leap years but 2000 will be. Under this rule, the average length of the year is only 26 seconds too long, and it will take the calendar 3,300 years to accumulate an error of only one day! Further changes to take care of this small error have been suggested, but we can certainly say that as far as the length of the year is concerned our calendar is satisfactory.

This was a wise change, but not as much can be said for the second change made by Gregory, in the light of developments which followed it. Gregory decided to bring the beginning of spring back to 21 March, and to do this, he decreed that the ten days following 4 October should be dropped from the calendar in the year 1582, that is, 4 October should be

followed by 15 October as shown in Figure I. His decree was followed by the Catholic countries, but the Protestant and Greek Orthodox nations would have nothing to do with it, and untold confusion resulted. England (and the American colonies) did not make the change until 170 years had passed, by which time the error had increased by another day. In 1752 eleven days were dropped from September as shown in Figure II where 2 September is followed by 14 September. This change was violently resisted by some of the people who thought their lives were being shortened by nearly two weeks, and there were riots and bloodshed. The Greek Orthodox countries waited even longer. When we purchased Alaska from Russia the Alaskans had to shift from the Julian to the Gregorian calendar by dropping 11 days. Russia did not change her civil calendar until 1918, but the Greek Orthodox Church has never made the change, which is the reason the adherents to this church celebrate Christmas at the end of the first week in January.

1582		OCTOBER				1582
SUN	MON	TUE	WED	THUR	FRI	SAT
	1	2	3	4	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

FIGURE I

The early Christian calendar had no week nor names for the days. The week with its day names was introduced in the year 321 A. D. by the Emperor Constantine, who was converted to Christianity in the year 312 A. D. In 324 A. D. Christianity became the official state religion of Rome. Among the ancient peoples there were weeks of various lengths ranging from five to ten days. The week adopted by the Romans, which has come down to us, was that of the Jews, who in turn had inherited it from the Babylonians. The origin of this seven-day week has been lost. Perhaps it came from the Moon, whose four principal phases occur at intervals of seven days. Perhaps it came from the seven ancient planets, among which were included the Sun and Moon. Certainly the names of the seven days were derived from the names of these seven bodies. The Babylonians

practiced, and perhaps originated, astrology. They believed that the planets somehow controlled the affairs of man, a superstition which unfortunately has never since been shaken off. The Babylonians built up a complex set of rules by which they pretended to predict the future. They believed that each hour of the day was ruled over by a different planet. Starting with the first hour of the first day, the planets were assigned to the hours in the order of their supposed distances from the Earth. Saturn, the most distant planet as they supposed, ruled over the first hour; Jupiter, the next most distant, over the second hour; and so on down the list to the Moon, supposedly the nearest, for the seventh hour, as shown in Figure III. This order was repeated until each hour of the first day had been assigned a planet, then the next planet was given to the first hour of the next day and so on until the end of the week. It will be seen from this figure that a different planet ruled over the first hour of each of the seven days. Later each day was named for the planet ruling over its first hour, hence:

1752		SEPTEMBER				1752
SUN	MON	TUE	WED	THUR	FRI	SAT
		1	2	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

FIGURE II

Saturn's day, the Sun's day, the Moon's day, and so on. Figure IV shows the names of the days in various languages, and the derivation from the names of the planets is clear enough for Latin, Spanish, and French, except for some differences involving the use of equivalents for "Sabbath" and "Lord's Day." The Latin planet names are also names of Roman Gods. Some of the Saxon, English, and German day names are derived from the corresponding Norse Gods. Tiw, the Norse God of War, corresponded to Mars; Woden corresponded to Mercury; Friga to Venus; and Thor, like Jupiter and Jove, was the God who used the thunderbolt as a weapon. Note that the Germans named the day after the thunder rather than the god who used it.

What of the future of our calendar, particularly with respect to changes which may be made within our lifetime? From the point of view of the

FIGURE III

BABYLONIAN ASTROLOGICAL TABLE SHOWING PLANETS ASSIGNED TO HOURS OF DAYS

	1st Day	*2nd Day*	*3rd Day*	*4th Day*	*5th Day*	*6th Day*	*7th Day*
1	Saturn	Sun	Moon	Mars	Mercury	Jupiter	Venus
2	Jupiter	Venus	Saturn	—	—	—	—
3	Mars	Mercury	—	—	—	—	—
4	Sun	Moon	—	—	—	—	—
5	Venus	—	—	—	—	—	—
6	Mercury	—	—	—	—	—	—
7	Moon	—	—	—	—	—	—
8	Saturn	—	—	—	—	—	—
9	Jupiter	—	—	—	—	—	—
10	Mars	—	—	—	—	—	—
	—	—	—	—	—	—	—
	—	—	—	—	—	—	—
	—	—	—	—	—	—	—
22	Saturn	—	—	—	—	—	—
23	Jupiter	Venus	—	—	—	—	—
24	Mars	Mercury	Jupiter	Venus	Saturn	Sun	Moon

The order 1, 2, 3, 4, 5, 6, 7, is the supposed order of distance from the Earth.

FIGURE IV

NAMES OF DAYS OF WEEK

Celestial Body	*Latin*	*Spanish*	*French*
SUN	Dies Solis	Domingo	Dimanche
MOON	" Lunae	Lunes	Lundi
MARS	" Martis	Martes	Mardi
MERCURY	" Mercurii	Miercoles	Mercredi
JUPITER	" Jovis	Jueves	Jeudi
VENUS	" Veneris	Viernes	Vendredi
SATURN	" Saturni	Sabado	Samedi

Celestial Body	*English*	*Saxon*	*German*
SUN	Sunday	Sunnan-daeg	Sonntag
MOON	Monday	Monan "	Montag
MARS	Tuesday	Tues "	Dienstag
MERCURY	Wednesday	Wodens "	Mittwoche
JUPITER	Thursday	Thors "	Donnerstag
VENUS	Friday	Friga "	Freitag
SATURN	Saturday	Saeter "	Samstag Sonnabend

business world, the calendar is still capable of considerable improvement. An ordinary year consists of 52 weeks and one day over, so that the weeks do not fit each year in the same way, giving seven different arrangements. If we consider leap years also, the number of arrangements increases to 14. These 14 different kinds of years or calendars follow each other in a cycle which does not repeat itself until 400 years have passed. If every year were 364 days long, all would be alike. Another defect of our calendar is that the two "halves" (six-month periods) are not equal to each other, nor are the four "quarters" (three-month periods) equal to each other. The individual quarters contain either 90, 91 or 92 days. Because of the shifting weeks, the number of weekdays is unevenly distributed among the months, ranging from 24 to 27.

To correct these defects, a calendar of 13 months was suggested nearly 100 years ago by Auguste Comte. Each month would start on a Sunday and would consist of exactly four weeks. Each month would be exactly like every other month. Each year would start on a Sunday and would be exactly like every other year. The extra day necessary to bring the length of the year to 365 days would be taken care of according to a suggestion made in 1834 by the Abbé Mastrofini. This day would be put at the end of the year after the last day of December (Saturday, 28 December) and before the first day of January (Sunday, 1 January) and would not be a part of any month or week. This day might be called "Year Day" or "New Year's Day" and would be an international holiday. Undoubtedly there would be great resistance to the change from 12 to 13 months, but there is another proposed calendar which has nearly all the advantages and involves much less change.

This is The World Calendar. Like the 13-month calendar it requires an odd day at the end of the year, a day which is not part of any month or week. Any new calendar must include this feature, otherwise the benefits to be gained would not offset the trouble of making the change. Six months of the present calendar remain unchanged. There are slight changes in the others, involving the shifting of only eight days. The advantages of this calendar are as follows:

1. The two halves of the year are exactly alike.
2. The four quarters of the year are exactly alike with respect to number of days and of business days.
3. There are exactly 13 weeks in each quarter.
4. There are the same number of weekdays in each month.
5. All years will be the same, so that a given date always comes on the same day of the week.

6. The adoption of this calendar would make possible the fixing of dates of the church festivals and holidays of all kinds.

For example, Easter now comes anywhere from 22 March to 25 April. With The World Calendar, it would come on 8 April always, only one day away from the actual anniversary, 9 April. It would be possible to arrange many holidays so that they would come on Mondays always, thus giving several three-day holidays during the year. This calendar has the approval of most of the important Churches. It is favored by the world of science, and of business. Several national governments have approved it, and it seemed to be well on its way to eventual adoption when the war stopped all such progress.

Let us hope that if this calendar is adopted in the future, we will benefit from the lessons of the past, and that the change will not be made until we are ready to adopt it all over the world at the same time, so that the benefits to be derived from the new calendar will not be outweighed by the same kind of confusion that has resulted from past changes in the calendar.

A GOOD CALENDAR BUT NO GOOD FOR "A DATE"

THE chief executive officer of one of the new international agencies was on a train. He had been reading Elisabeth Achelis' *The Calendar for Everybody*. Upon finishing it, he left it in his chair and moved to the other end of the car and engaged a pretty young girl in conversation. Tired of dining alone and with the tedium of a long trip by rail, he planned to invite her to dine with him.

Suddenly a male voice interrupted: "Pardon me, was that your book about the calendar?"

"Yes," he responded.

"I took the liberty of picking it up and reading a part," explained his fellow traveler, and they began a discussion of calendar reform.

The sweet young thing listened for a time. When he again noticed her she had drifted to the other end of the car and was talking with a young army officer, who soon carried her off to dinner.

Upon meeting the editor of this *Journal* upon his return, he told him the story and wryly concluded with the words: "The World Calendar is doubtless the best of all possible calendars, but is no good 'to make a date.' "

STABILIZING THE CALENDAR

By Dr. J. W. Baldwin, Associate Professor of Education, University of Texas

Dr. Baldwin's speech at Galveston was printed in the* Proceedings and Transactions of the Texas Academy of Science, *published in 1945.

IT IS the purpose of this paper to advocate a plan for a few minor alterations in the Gregorian calendar which, if adopted, would make our present-day calendar as reliable and as simple as a perfectly regulated 24-hour clock. The World Calendar Association, a non-political, nonsectarian service organization, proposes a slight revision in the calendar which would eliminate all the inconsistencies, the perplexing irregularities, and the imbalance which makes it so difficult to regulate our personal and institutional affairs in terms of the device which we have adopted for the purpose of subdividing the solar year.

THE DEFECTS OF OUR CALENDAR

Practically all the complexities and lack of uniformity which characterize the Gregorian calendar arise from two sources. One tremendous difficulty is posed by the fact that the regular year contains one extra day and the leap year two extra days above the 52 weeks of seven days each. This fact causes every month-date in the year to come on a different day of the week than it did the preceding year or will the following year. No two consecutive years can be alike under the present plan. Instead of the perpetual, uniform, balanced calendar we are confronted by a conglomeration of 14 different calendars making it impossible to schedule personal, social, and commercial commitments satisfactorily for any considerable period of time in advance. In all kinds of institutional agencies such as schools, clubs, courts, industries, labor organizations, fraternities, churches, and units of government, some commitments, engagements, and special events are scheduled by weekdays while others are scheduled by month-dates. Since month-dates wander through the week from year to year individuals and groups are constantly finding that they have made impossible schedules for their activities and obligations which result in serious inconveniences and, in many instances, in large financial sacrifices.

This small fraction of the year which throws the calendar out of balance frequently causes certain special days to come on Sunday despite the fact that they can be properly observed only on weekdays. If our

solar year had been exactly 364 days instead of approximately 365¼ days, these and many other schedule and time-table difficulties need never have thwarted man's attempt to devise a perfect instrument by which to keep track of the march of time. The year would have had exactly 52 weeks, and could have been divided into four equal quarters instead of the unequal quarters with which we have to deal at present.

Although this would still not give us a year with exactly 12 equal months it does make it possible to rearrange the months so that we would have exactly 26 weekdays in each of the 12 months. A few extra Sundays would not gum up the time-table machinery as does the unequal number of weekdays in the months.

Only one example from thousands which could be given will be used to illustrate how the unequal number of weekdays in different months works great hardships on many people. If an individual earns ten dollars per day and pays for board, rent, utilities and other living expenses by the month he will find that he has 20 dollars less with which to pay his bills in some months than he has for others. Under the present arrangement he would occasionally have 30 dollars less for such financial obligations. The problem would be as harassing for the employer as for the employee. The problem is reversed for the person who has a set monthly income which has to take care of the bills for months of unequal length. A disabled veteran who has an allowance of $115.00 monthly has 40 cents less per day in January and March than he has in February to meet his daily financial needs. This is a considerable margin when associated with such a small income.

Thus the second defect in our calendar arises from the fact that the calendar makers carelessly provided for months of unequal length. Especially burdensome is the fact that our months were not given an equal number of weekdays. Every industry, every profession, and every institution suffers innumerable inconveniences and almost unlimited financial losses as a result of this arrangement. The keeping of records, the fulfillment of contracts, the problems of budgeting, the intricacies of statistics, and hundreds of other factors involved in all types of social and industrial processes are infinitely more complicated, time consuming, and expensive than they would be if our months were given an equal number of weekdays and the four quarters were equalized. Millions, even billions of dollars annually are added to the amount which would be required for the same operations under a uniform and perfectly balanced calendar. Additional millions would be saved along with the solution of many other knotty calendar problems if each year were an exact duplicate of every other year.

REMEDIES PROPOSED

After years of research and inquiry, The World Calendar Association has instituted a very simple plan for revision of the Gregorian calendar which would completely remedy its present defects and give us a perfectly balanced calendar with exactly 52 weeks, exactly 26 weekdays per month, and exactly 91 days in each quarter. Each of the four quarters would be alike in every particular. The first month in each quarter would have 31 days, and the second and third months in each quarter would have 30 days each. The extra day in each of the four 31-day months would be a fifth Sunday for each of those months, leaving 26 weekdays in each of them as well as in each of the other eight months.

It will be seen that this plan provides for a calendar year of only 364 days. Since the earth will not adjust itself to this scheme by reducing the time required for its annual revolution about the sun we are left with an extra day on our hands in regular years and two extra days in leap years. The only way to secure a perpetual and balanced calendar requires the intercalation of one day each regular year and two days each quadrennium. The proposed plan for stabilizing the calendar suggests that what is now the 365th day in all years, and the mid-year day in leap years be observed as international good-will holidays and be omitted from the calendar year. These days would be known as W December and W June. They would follow 30 December in all years and 30 June in leap years.

This would give us a year in which the months could be allotted their days according to the following pattern: January 31, February 30, March 30; April 31, May 30, June 30; July 31, August 30, September 30; October 31, November 30, December 30. Not only will each quarter be like each other quarter in length of corresponding months, but each month in each quarter will begin and end on the same weekdays as will corresponding months in each of the other three quarters. Each year and each quarter will begin on Sunday and end on Saturday. Each month-day in every year will come on the same weekday from year to year. Christmas will always be on a Monday as well as on 25 December. The Fourth of July will always be on Wednesday. Labor Day and Election Day will always come on the same dates in their respective months as well as on their customary weekdays. All holidays and all other days will be permanently anchored to given weekdays.

As an example of the effect of this proposed revision on various institutions let us apply it to the schedules of schools and colleges. Under the present calendar such institutions usually open the session on a given Monday in September. For many of the elementary and secondary systems this would be the first Monday. Many others are governed in

this respect by the date of Labor Day, scheduling the opening of the fall semester either the next day or the next Monday after Labor Day. In any event, since the first Monday or any Monday comes a full week earlier in some years than in others the length of the pre-holiday period, the length of the post-holiday period, the length of the summer vacation, and other items of the schedule are thrown out of balance. Students, patrons, and teachers cannot plan their vacation activities in advance because they cannot, as a rule, know when they must be ready for the opening of the school year.

Faculty meetings, P. T. A. meetings, class nights, important athletic events, various special days, club programs, exhibits, visiting days, and many other school events are constantly conflicting because some are scheduled by weekdays while others are scheduled by month-dates. When the new calendar is adopted we can confidently say for all institutions and professions, "It makes no difference now," whether you schedule your special occasions by month-date or weekday. They need never conflict. And what is better, a schedule can be made for ten or twenty years as easily as for one year. School will always begin and end on the same days of the corresponding months each year as well as on the same corresponding days of the week. Everybody concerned will know even years in advance what the schedule will be in its main features, and will be able to make his own personal schedule to harmonize with those of the school or to synchronize it with the schedule of any organization in which he may be interested.

Millions of dollars worth of time and effort are devoted each year to the task of devising schedules for schools and colleges, only to be discarded at the end of the year and never used again. The whole job has to be slavishly repeated for each school session. In colleges the directors of interscholastic contests and other activities are forced to give much time and incur great expense in revising schedules each year. While they are doing so, many other groups are busy scheduling other important events which conflict with the programs adopted by these directors. With the uniform calendar all of these schedules could be made cooperatively for years in advance at one meeting of the interested groups.

In the legal profession, attorneys report that millions of dollars are lost to their clients annually in foreclosures on liens, mortgages, notes, and other obligations because clients assume that 90-day, 60-day, and 30-day obligations are the same as 3-month, 2-month, and 1-month contracts respectively, and as a consequence permit the time to expire while waiting for the monthly pay check with which to liquidate such obligations. Thousands of insurance policies are forfeited merely because the

insured individuals have so frequently assumed that thirty days grace has the same meaning as one month grace. The difference of one day, which is true for some months, has kept numerous beneficiaries from the enjoyment of the proceeds of such policies.

Under the new plan all commercial and legal documents would be safeguarded against such possibilities. Moreover, all records, documents, engagements, commitments, and other legal instruments would have weekday dates as well as month and year dates. This would avoid legal contests over the question of whether obligations due on a holiday could be legally met on the following day, and would further reduce the possibility of confusion relative to maturity dates. This third dimension in date recording would simplify social and professional commitments in a great many more ways than would on first consideration be thought possible. It would not be long until everybody would learn on what day of the week any month-date will fall. This would greatly facilitate the making and consummation of all kinds of plans and activities. It would be far easier to remember the dates for our engagements if we could have synchronized month-dates and weekdays.

One of the chief advantages of The World Calendar is the probability that it will be adopted by practically all countries if it should be sponsored by the United States and our allies. Fourteen countries have already approved it and are awaiting our leadership to put it into operation. It would greatly facilitate international "time-tables," commitments, understanding, and friendship in the new era. Our relations with all the rest of the world will be so intimate that the many different kinds of calendars now in use in different countries would constitute a serious handicap to international trade, communication, and other relations.

Man has been revising his calendar for nine thousand years. He has not hesitated to improve it in the past when his needs demanded its revision. He will not long oppose a final reform which will make it meet every demand which he could make of a calendar. A calendar for the horse and buggy age will not be tolerated in the air age. All concepts of human progress are assuming global dimensions these days. It is time we should adopt a global calendar to facilitate progress in every area of human activity, and on a world-wide basis.

The World Calendar has the approval of the National Education Association, the World Federation of Education Associations, thousands of prominent educators, labor leaders, capitalists, the motion picture industry, many leading scientists and scientific organizations, many religious groups, prominent officials in practically all religious denominations, many

Congressmen and other governmental officials, and many outstanding leaders in all parts of the world.

The English-speaking countries changed from the Julian to the Gregorian calendar less than two centuries ago, and in doing so lost 11 days out of the calendar. The present proposed change does not involve any loss or gain of time. It consists simply in shifting a day or two from one month to another, involving about half of the months, and the recognition of one day each regular year and two days each leap year as World Holidays. These alterations are so slight that no individual and no group would suffer any inconvenience while everybody would benefit immeasurably from the change. Every year would be an exact duplicate of every other year, and one calendar could be used indefinitely.

I would like to recommend that this Section of the Texas Academy of Science voice its approval of The World Calendar and communicate this action to Texas Representatives in the United States Congress.

OBITUARY NOTE

SILAS H. STRAWN, a senior member of the law firm of Winston, Strawn and Shaw, Chicago, died of a heart attack in Palm Beach, Fla., on 4 February. He was 79 years old.

He was born near Ottawa, Ill., studied law at night while working during the day, and was admitted to the bar in 1889. Two years later he joined the law firm of Frederick S. Winston at Chicago.

His firm was counsel for Montgomery, Ward & Company, Union Stock Yards and the Transit Company. He was a Director of the First National Bank of Chicago, the Chicago & Alton Railroad, the American Creosoting Company, Wahl Pen and Pencil Company and the Hurley Machine Company. In 1925, he served with the American Minister to China on a special conference on Chinese customs tariffs.

Silas Strawn was formerly President of the American Bar Association, the United States Chamber of Commerce, the United States Golf Association, and a Vice President of the International Chamber of Commerce. He was considered one of the nation's outstanding lawyers.

In May 1933, he was the Chairman of the American Delegates, of which Miss Achelis was a member, attending the Congress of the International Chamber of Commerce at Vienna. He became interested in The World Calendar and in a letter to Miss Achelis in 1943 he wrote: "It is very interesting and, if it were adopted, would be an improvement on the present calendar. . . . You are deserving of the gratitude of thinking people in so persistently pursuing the idea. After the war is over I believe people will be more receptive of your plan."

TOWARD CALENDAR REFORM

By Dr. Karel Hujer, Department of Physics and Astronomy, Michigan State College

The substance of his two broadcasts on WKAR has been incorporated in this article by this member of the School of Science and Arts of Michigan State College.

ASTRONOMY contributes fundamentally to the concept of time, upon which depends a very important institution of man's civilization —the calendar. We are unable to discern whether or not animals are capable of perceiving the flow of time, and, if so, how. But in both animal and plant life we do know of amazing examples of clock-like responses repeated daily or at some interval which evokes the same set of stimuli or perceptions. The concept of time in any mind can only be produced, first, by a change, and, secondly, by repetition of this change. Unquestionably, the earliest notion of time developed from the regularity of the cycle of day and night, which has continued since the beginning of the individual existence of our planet, the earth. It is irrelevant if ancient man ascribed the regular return of morning or of twilight to the movement of the sun instead of to the rotation of the earth, as we now understand it, even though today we repeat "the sun rises" instead of using the more precise statement "the earth turns toward the sun."

Progressively, day and night were divided into smaller units, which for many centuries were measured by the position of the sun during the day, and, for example, by flowing water at night. Both phenomena later helped man to develop the earliest forms of a clock—the sun-dial from the sun, and the water-clock, or clepsydra, from flowing water at night. The water-clock was already known to the Egyptians, its invention being ascribed to Thoth. Water running out regularly from a reservoir was caught in a receptacle which showed the hours. This instrument enabled ancient astronomers of Chaldea and Egypt to measure the hours of the night, for more precise timing of celestial events. Since time was regulated by the Sun, the highest of all gods, ideas associated with time were deemed sacred, and an interesting division of day and night ensued, each smaller period consecrated to a retinue of lesser gods, subservient to the dominant Sun.

For example, in Roman days Saturn had a period of the day reserved to himself alone, whereas the Moon, Jupiter and Venus reigned over another portion of the day assigned to each individually. Is it accidental that the Aztecs and the Incas, in the far-off region of the New World, had the same divisions of day and night, each requiring complicated observance, as in temples of the Pantheon? The only variance was language and the names of the gods, but the trend of ideas in the evolutionary process of primitive man was similar throughout the world. The consecration of the day-night cycle to the then known seven celestial bodies of the solar system representing gods, beginning with the Sun and ending with Saturn, led to a longer period—the week—which constitutes the next unit in our calendar.

The actual origin of the week is quite obscure. The immemorial custom of computing by weeks, or periods of seven days, may be traced back to the ancient tradition of the creation of the world in seven days. Also, the seven celestial bodies known to the ancient world—Sun, Moon, Mars, Mercury, Jupiter, Venus and Saturn—may have suggested the idea of a week of seven days. When the old Biblical observance of the seventh day, the holy day, was dedicated to Jehovah by the old Hebrew prophets, it was already a very old institution, deeply rooted among the civilizations which preceded the House of Israel.

There are two other cycles to which man was naturally led by his observation of the heavenly appearances: the month and the year. The month discloses by its very name that it is correlated with the Moon and the period of her lunations, from full Moon to full Moon, for example. Attracted by her beauty and influenced by her proximity, evidently the first calendar counts were made by the revolutions of the Moon, her motions being the swiftest of all the heavenly bodies. It was natural, indeed, for the earliest inhabitants of the earth to calculate by the lunar year. This was still too short a period, however, and with the lapse of ages, as man's need expanded with his enriched experiences, reformers further extended their calendar counts to include the apparent yearly motion of the principal luminary—the Sun. In combination with the lunar period, this resulted in the luni-solar year of the ancients, consisting of 360 days. The Mayan and Aztec calendars are famous for this luni-solar combination because it had a great social significance for those pre-Columbian civilizations. Every year the Aztec calendar entirely excluded 5 days, as if non-existent, making them the most unlucky days. This ancient luni-solar year was a futile attempt to harmonize the lunar and solar periods while their accidental orbits never indicated such a tendency. The luni-solar combination could never fit into the solar or equinoctial year, the latter

being the calendar of the returning Spring season, and thus the decisive factor of man's life. Therefore, in succeeding ages the true solar year had to be adopted, with all other periods as subsidiary.

The solar year is the period between two successive passages of the Sun through the vernal equinox, which is the intersection of the celestial equator and the ecliptic in that part of the heavens where the Sun is located on 21 March. Curiously, neither the diurnal rotation of the earth upon itself, nor its annual revolution around the Sun, nor the movement of the Moon around the earth, are in any way related to each other. In other words, they are entirely incommensurable. Naturally, one day was too short a period to be the only unit used in the lifetime of man. Advancing human civilization therefore developed the month and particularly adopted the most important period of our present calendar, the year. The incommensurability of the day, month and the year, however, brought with it the inevitable problems of the imperfect calendar of today which, in addition, remains a mixture of remarkable intellectual daring, superstition and tooth-and-nail conservatism.

The principal problem of our terrestrial calendar issues from an inexact number of days in the year. The rotation of the earth upon its axis, which comprises our day, was not created by the Architect of the solar system for the convenience of the calendar maker, to fit smoothly within the period of the earth's revolution around the Sun, which in turn makes up one year. Although officially we reject astrology as superstition, still our calendar is more a relic of astrological fears and superstition than a product of sound astronomical reasoning.

A complete revolution of our globe around the central luminary, the Sun, is not performed in exactly 365 nor 366 days; the true figure is 365 days, 5 hours, 48 minutes, 46 seconds. Thus, if during several centuries we regularly maintain a 365-day year, with every fourth year a leap year of 366 days, which was established in 45 B. C. when Julius Caesar introduced the Julian calendar, we soon are perceptibly in advance of nature. Astronomers of the 16th century corrected their predecessors' use of the Julian calendar by omitting 10 days, and in most Catholic countries 5 October 1582 became 15 October. In order to avoid the recurrence of a similar discrepancy, it was decreed that the rule of adding an extra day every fourth year should be followed except in those century years not divisible by 400. Thus, A. D. 2000 will be a leap year, whereas the years 1700, 1800, and 1900, not divisible by 400, were consequently not leap years.

The calendar reform of Pope Gregory XIII in 1582, which established the Gregorian calendar used today, was not readily accepted. Influential

as was the Pope's authority in the Catholic world, among his followers great confusion, suspicion and open aversion existed to the harmless calendar adjustment. In Protestant countries, such as England, there was a decided and emphatic refusal of the papal decree, for no other than politico-religious reasons, and this despite the fact that the reform was entirely of an astronomical nature. Finally in 1752, more than 150 years later, and many years after the great scientific genius, Isaac Newton, had influenced human society, England decided to accept the inevitable calendar reform, when the discrepancy had already reached 11 days. The reform in England even then resulted in violent agitation.

The questions now arise: Is our present Gregorian calendar a satisfactory system of divisions of the civil year? Is it an orderly arrangement of the divisions of time, as years, months, weeks and days, which are adapted to the purposes of civil life? As previously indicated, a mere glance at our calendar will reveal its limping imperfections and incredible anachronisms.

Our Gregorian calendar, introduced by papal decree in 1582 A. D., is a decided improvement over the former Julian calendar established in 45 B. C. But a closer investigation will reveal that the Gregorian reform solved only the most inevitable error of the Julian calendar, leaving all other fallacies intact. We must admit that our present calendar, which is still largely of Julian origin, was a great credit to the Alexandrian astronomer, Sosigenes, for it was this astronomer whom the Roman dictator, Julius Caesar, charged with the rearrangement of the calendar in 45 B. C. Truly, it is a most amazing fact in the history of civilization that with but a minor reform this calendar has survived for 2,000 years.

Does what was good for the Romans 2,000 years ago adequately serve the 20th century? Do we so highly regard heathen Romans that we deem as untouchable or sacred a calendar system practically the same as that which legend recorded as a vain act of the dictator Augustus? This appears to be the case. Just as in England notorious conservatism for 150 years opposed the correction of some of the most flagrant errors by means of the Gregorian reform, and refused to reconcile their calendar with this reasonable innovation, so we today cling tenaciously to long-established habits and certain status quo. Even though we take pride in following new fashions, let us remember these so-called new fashions are first carefully sold to the masses through the subtle psychology of advertising. Our calendar assuredly is not proof we are very progressive.

First of all, the names of the weekdays are decidedly of pre-Christian origin. Our English name, Sunday, discloses most readily that our Lord's Day still carries the distinct vestige of its original dedication to the Sun.

It was the *Dies Solis*, the day of the Sun, the god of all gods in ancient Rome. Centuries of zealous Christian campaigns and crusades did not efface this verbal commemoration of our heathen ancestry. Its name in Russian is *Voskreseniye*, meaning resurrection. Likewise, the remaining days of our week indicate association with some pre-Christian deity. Monday is Moon's Day, Thursday is Thor's Day and Saturday is Saturn's Day, while the names of the remaining days of the week show similar derivations in French or other Latin languages. The association of the names of our weekdays, however, does not disturb us today; we look upon this as a harmless, historical heritage.

There are more serious problems which should be rectified in our calendar. Under the influence of the Old Testament, our forbears incorporated the lunar period in our calendar. This was the basis of the Jewish calendar. Mohammed, who was more impressed by Jewish practical teaching than by Christian idealistic philosophy, adopted the Jewish lunar calendar for his followers, and as a result an impossible system of lunations is the basis of the Mohammedan calendar. Our Gregorian calendar also forces the lunation period in our system through the variability of the Easter holiday. According to tradition, Easter Sunday is placed after the first Full Moon following the Spring Equinox, which of course is not fixed. This observance is a very ancient equinoctial holiday, emerging ages before the Christian era, in which Solar and Lunar rites were performed in unison.

Furthermore, our calendar left untouched evidences of the reforms of two Roman dictators, whose acts were commemorated by the Roman Senate. The names of the two months: July for Julius, and August for Augustus. The rulers Tiberius, Nero and Commodus also attempted to consecrate months to themselves, but as one satiric writer remarks: "Fortunately, for the honor of nations, this attempt did not succeed."

The deplorable state of our present calendar is entirely incongruous with our civilization which otherwise takes pride in its streamlining, its pragmatism and time-saving devices. Our calendar is an antiquated heritage of clumsiness and illogism and is prevented from growing by deeply rooted superstition, indolence and indifference. More than ever, our calendar cries for reform; as always, such reform forebodes some opposition. We well remember the recent aversion and hostility toward such a minor adjustment as Thanksgiving Day. It is significant that the dream of calendar reform was associated with two major revolutions in Europe, the French and Russian revolutions. Each produced a radical plan for a new calendar, which was accepted and flourished for a few years, while heads were still hot, but finally was laid aside with other radical plans

which the later revolutionary period was unable to promulgate. Little wonder that stagnate Czarist Russia retained the old Julian calendar.

The only solution to the calendar problem lies in a bold decision to accept the best of existing suggestions. Although the proposition of a 13-month calendar corresponds most nearly to the 13 lunations within the solar year, we can hardly expect the public to accept an inconvenient and indivisible number like 13. Therefore, the most acceptable suggestion is one propagated by The World Calendar Association, which offers a calendar divided equally into four parts. Each quarter of the year would be a unit for itself, its months having in succession 31, 30 and 30 days. Each quarter would commence with Sunday and end with Saturday. Furthermore, month dates, at present circulating and never falling twice in succession on the same weekday in the Gregorian calendar, would now be fixed. Thus, Washington's Birthday on 22 February would always fall on a Wednesday. Then there would be two World Holidays, one each 31 December, the other each fourth year, corresponding to our present leap year, but this holiday would appear at the end of June. The plan of The World Calendar is truly remarkable. It is a symmetric and harmonious calendar, prepared to meet the requirements of a cosmopolitan society of a future world of peace and collaboration. Let us hope that the year 1950 will see its general acceptance and introduction, for the progress of future centuries.

OBITUARY NOTE

DR. WILLIAM ALLAN NEILSON, President Emeritus of Smith College, died at Northampton, Massachusetts, on 13 February. Dr. Neilson had been living at Falls Village, Connecticut, since his retirement in 1939.

Dr. Neilson, a native of Scotland, had been a teacher since he was 13 years old, teaching in Scotland and Canada and in the United States at Harvard, Bryn Mawr, Columbia and Smith. Under his administration Smith College became the largest college for women; but he was prouder of the fact that Smith College was an institution where academic freedom was an actuality and not just a theory.

While a student at the University of Edinburgh he had turned his attention to the study of Philosophy and was graduated with honors in 1891. Dr. Neilson migrated the same year and taught at Upper Canada College. Four years later he entered Harvard College. He then joined the faculty of Bryn Mawr College serving there as Professor of English until 1900 when he returned to Harvard. Then followed one year at Columbia, again Harvard, where he taught for eleven years, and in 1917, he was elected President of Smith College.

His books, such as *Essentials of Poetry*, *Facts about Shakespeare*, and *Burns: How to Know Him*, reveal his humor as well as his scholarliness. For many years he edited *Webster's New International Dictionary*.

One of the country's best loved and admired college presidents, he was long a member of The World Calendar Association.

CURRENT PRESS COMMENT

Good Features Embodied

Philadelphia (Pa.) Inquirer

30 December 1945

TAKE the length of the month and add to it the length of the year. Mix into this a little bit of many religions along with some of the sciences. Now add to this some knowledge of agriculture and spice with egotism. Stir for 6,000 years and the concoction will emerge as our calendar. For that indeed is the story of the origin of the calendar we use today.

In our everyday lives we attempt to fit together the year, the month, the week and the day. This obviously is impossible. The ordinary year of 365 days contains 52 weeks and one day over. Finally, there is not an even number of days in the year. We are striving for the impossible in attempting to correlate these periods.

One of the many solutions suggested for the calendar problem is The World Calendar. This tampers least with the calendar in use today.

Literally thousands of scientists, business men, government officials, churchmen and at least 14 nations have signified their approval of this World Calendar and hope for its early adoption. It embodies the good features of the Gregorian calendar and rejects the confusions.

World Peace Holiday

Waterville (Me.) Morning Sentinel

4 January 1946

A SUGGESTION has been made that we have one more holiday. This one would be a little different than the rest. It would be a world holiday to celebrate peace.

Almost all of our holidays now, and the same is true of other nations, celebrate some day which is distasteful to some other country. They are for the most part the date of victory over some enemy.

Perhaps this suggestion may be the answer to what should be done with the extra day which is left over in The World Calendar which various business interests are trying to have adopted.

Under this new plan the year would be divided into 12 months as now. Each quarter would be the same although the length of the months would vary. There would be one day left over at the end of the year. This could well be the World Holiday which has been suggested.

The new calendar would be a great advance over the one under which we now work, but there have always been objections as to what would be done with this day. It seems to us that this suggestion takes care of those objections and provides a new type of day which could be celebrated in all the civilized nations of the world as a day devoted to peace.

Fixed and Dead

Ottawa (Can.) Evening Journal

13 February 1946

A NEW age requires a new calendar: The World Calendar. Those who oppose it because of inertia or mere opposition to change, and they are many, indeed the great majority of the indifferent or critical, are even as the Pyramids on the Nile. Fixed, immovable, unchanging, they belong to a dead civilization, not to the living. Moving past them are planes, ships, automobiles, trains, radio, television and atomic energy, but they remain static, negative, inert, not a part of the present and in no sense a part of that world embryonic in the womb of the future.

EXCERPTS AND REVIEWS

World Holiday Called United Nations Day

From a Lecture at the Institute of Arts and Sciences, Brooklyn Academy of Music, 12 March 1946. U.N.DAY was then called UNO-DAY.

IN the course of a lecture before the Institute of Arts and Sciences at the Brooklyn Academy of Music, Miss Elisabeth Achelis, President of The World Calendar Association, suggested consideration be given to naming the Year-End World Holiday: United Nations Day.

"For the first time in history a holiday is provided by the calendar itself for world-wide observance. It will provide an unprecedented opportunity to celebrate adoption of The World Calendar by the United Nations and will serve as a testimonial to that organization.

"I am proposing that when this epoch-making event is assured, the 365th—that Year-End Day which stabilizes The World Calendar—be renamed U.N. DAY. On this holiday, nations, peoples, races and creeds may all unite in a greater spirit of understanding, friendship and good will. For the United Nations what finer augury could there be for its success than the launching of the perpetual World Calendar with U.N. DAY as a symbol of a united and free world.

"The U.N. can hardly initiate a better beginning than to ring out the old calendar and ring in the new.

"The Julian calendar reform honored Julius Caesar and his birth-month, Quintilis, was renamed July. Augustus Caesar, another calendar reformer, was commemorated by the renaming of the month, Sextilis, to August. The Gregorian reform was named for Pope Gregory XIII. It is eminently fitting that the United Nations be honored by U.N. DAY in merited recognition of its distinguished service in providing mankind with the perpetual World Calendar.

"The World Calendar Association has placed the destiny of The World Calendar within the framework of the United Nations and my fervent hopes are joined with yours and that of all mankind that U.N. may achieve its objectives and accomplish its purposes. May it enable the peoples of the world to live in freedom, security and peace."

World Center of Calendar Authority

From The World Almanac, *New York, N. Y., 1946*

CALENDAR revision continues to progress toward actual adoption by 1 January 1950. The World Calendar is the only plan now receiving serious international consideration. It has already the approval of 14 governments: Afghanistan, Brazil, Chile, China, Estonia, Greece, Hungary, Mexico, Norway, Panama, Peru, Spain, Turkey and Uruguay.

It is sponsored internationally by the Chambers of Commerce of the British Empire, the Universal Christian Council, the World Federation of Education Associations, the Mexican Hotel Association, the Canadian Retail Federation, the Labor Conference of American States, Chile, etc.

In the United States, it has the support of the National Education Association, the General Federation of Women's Clubs, the National Federation of Business and Professional Women's Clubs, the New York State Chamber of Commerce and other Chambers of Commerce, the American Association for the Advancement of Science, the American Academy of Arts and Sciences, the American Industrial Bankers Association, the American Institute of Accountants, the Amateur Athletic Union, etc. Among religious denominations, it is approved by the Protestant

Episcopal Church, American Lutheran, Reformed, and has the endorsement of the Methodist Church Council of Bishops.

The World Calendar is being advocated by calendar reform organizations in Argentina, Australia, New Zealand, Belgium, Bolivia, Brazil, Canada, Chile, China, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, England, France, Germany, Greece, Hungary, Ireland, Italy, Mexico, Panama, Paraguay, Peru, Poland, Spain, Switzerland, Turkey the United States, Uruguay, Venezuela and Yugoslavia.

This reform, long the subject of international conference and study, impartially meets the need of industry, government, social life, agriculture, education, science, religion, and all phases of activity. Clearly one great benefit of this reform is the perpetual feature, every year the same in arrangement; and another, the coordination of the various time units is secured at the end of every quarter. This stability and coordination would be obviously of great benefit in all our war efforts and productions, as everything would move more smoothly with the use of this balanced and steady measurement of time.

To put a revised calendar into actual operation it is obvious that some kind of international agreement must be secured. It is anticipated that definite international action within the next few years, before 1948, by a nation or group of nations, will be inaugurated for the adoption of The World Calendar on Sunday, 1 January 1950, when both the present and The World Calendar agree. This date makes the change from the old to the new calendar easy. Every year would begin on Sunday, 1 January, and the working week would begin with Monday, 2 January, as New Year's Day is preceded by the Year-End Day, the World Holiday.

The World Calendar Association, sponsors of The World Calendar and the world center of calendar authority, is located in the International Building, Rockefeller Center, New York 20, New York.

The Calendar

From Popular Astronomy, *published by Goodsell Observatory, Northfield, Minn., January, 1946*

THE calendar is a man-made device for the purpose of recording the repetitious phenomena of the heavenly bodies. Each time the earth completes a rotation on its axis, the calendar records a day; each time the moon completes a revolution around the earth, the calendar, approximately, records a month; each time the sun completes its cycle of movement among the stars, the calendar records a year; each time the celestial pole completes a circle in the sky, the calendar records a Great Year. (Since this last is some 26,000 ordinary years in length, it will not concern us greatly at present.)

The day, the month, and the year, as determined by natural events, are not commensurable with each other, consequently adjustments are necessary from time to time to keep the calendar in step with the actual circumstances. These required adjustments are thoroughly understood and the present calendar will serve its purpose for an indefinite period. Although the astronomer's knowledge is essential to its construction, every civilized person makes use of it and instinctively resists change.

However, any thoughtful person upon reflection will agree that at one point a change is desirable. The distribution of the days in the several months is arbitrary. As at present it is irregular, inconvenient, and irrational. Historically it represents the whims of several ruling monarchs and not a scientific necessity. An arrangement whereby one might know, without looking at a printed schedule, the day of the week on which a given date would invariably fall, would be a vast improvement.

Now we are aware that we are living in One World and that civilization is undergoing fundamental and radical changes. It would seem, therefore, that the time for a highly desirable and greatly needed Calendar Reform is here.

FROM THE MAIL BAG

It was with great pleasure that I read your latest *Journals* and congratulate you on the progress made by The World Calendar Association. There is no doubt in my mind of the international benefits its adoption would bring in stabilizing and facilitating world interests and I am particularly glad, not only to renew my support of the past, but also to accept gratefully, in my own capacity, your kind offer to become a member of your Foreign Advisory Committee.—Justin Godart, Senator, Paris, France.

I do hope that Sunday, the first of January 1950, in some way can be the beginning of the new calendar. I shall be glad to sign a round-robin indicating the superiority of The World Calendar.—Gano Dunn, President, The J. G. White Engineering Corp., New York City.

I have been, for many years, a member of your Association, and I have become more and more convinced of the immense need of the reform advocated. It is not merely a matter of academic interest in order to gratify the scientists' urge for logical correctness; it is also a crying need in the everyday affairs of the ordinary citizen. It is extremely important that this Association diligently work up such a universal and vigorously outspoken demand for this reform that even the most timid legislator will feel perfectly safe in following the lead of common sense—Patterson Wardlaw, Univ. of South Carolina, Columbia.

With all of these meetings of international factors, I have just been hoping to hear that The World Calendar was made part and parcel of peace terms. It should be. I cannot wait for V-WC Day.—Alma K. Anderson, Pres., Red Head Brand Co., Chicago.

I hope we will soon adopt a sane calendar change, now that the world is becoming conscious of the new order. In California, we have so many holidays which disturb the business routines—not to mention affecting mail deliveries. It just is *not* orderly or systematic—and the changes you foresee will prove most advantageous.—Ruby F. Remont, Graphologist, Los Angeles, Cal.

Our organization has followed for some years the work of The World Calendar Association to bring about acceptance of The World Calendar, and you may rest assured that to us any activity in that direction is immediately associated in our minds with your organization.—Eugene F. Hartley, Economist, New York, N. Y.

We do believe, as business men, that action should be taken by UNO through our representatives in that organization as a part of a unified action in the interests of all nations. Why not do it now? —Edward N. Weinbaum, Manager, Portland Retail Trade Bureau, Ore.

While serving as City Clerk in this municipality, I first learned of the proposition for calendar reform and immediately became an advocate for adoption of The World Calendar. From many years of office work involving calculation of wages for fractions of months of unequal length, the absurdities of the present calendar impressed upon me with annoyance. The World Calendar having always 26 weekdays in each month will overcome this one difficulty in calculations.—R. B. Schoonmaker, Las Vegas, N. M.

At the present moment, the financial and moral credit of the U.S.A. stands very high, especially in this country; and I believe if your Government could be induced to take a real interest in calendar reform all the European nations and the British Commonwealth are certain to follow the example of your country.—H. Henry Konig, Newport Pagnell, England.

For a thinking world (one of the atomic future) you really have something every wide-awake merchandising man will fully appreciate.—John Bradford, Merchandising, Baltimore, Md.

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AUSTRALIA: Committee on Calendar Reform of the Australian and New Zealand Association for the Advancement of Science, C. W. Allen, Secy., Solar Observatory, Canberra.

BELGIUM: Belgian National Committee on Calendar Reform, Professor M. Dehalu, President, l'Université de Liège, Liège.

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CANADA: Rational Calendar Association, A. J. Hills, Chairman, National Joint Conference Board of the Construction Industry, Confederation Bldg., Ottawa.

CHILE: Comité Chileno del Calendario Mundial, Prof. Alberto Cumming, Chairman, Calle Manuel Rodriguez, Santiago.

CHINA: Chinese Association for the Study of Calendar Reform, Dr. Ch'ing-Sung Yü, Director, National Institute of Astronomy, Kunming, Yunnan.

COLOMBIA: Comité Colombiano del Calendario Mundial, Bogota.

COSTA RICA: Comité Costarricense del Calendario Mundial (Igualmente de Guatemala, Honduras, El Salvador y Nicaragua), H. E. Don Teodoro Picado, Chairman, San José.

CUBA: Comité Cubano del Calendario Mundial, Belén Observatory, Havana.

DOMINICAN REPUBLIC: Comité Dominicano del Calendario Mundial, Barney N. Morgan, Chairman, Box 727, Ciudad Trujillo.

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ENGLAND: Rational Calendar Association, C. David Stelling, Director, 38, Parliament Street, London.

FRANCE: Comité National pour la Reforme du Calendrier, Senateur Justin Godart, President; Paul-Louis Hervier, Secy., 5, Rue Bernoulli, Paris.

GERMANY: Deutscher Ausschuss für Kalenderreform, Dr. Grosse, Geschäftsführer, Neue Wilhelmstr. 9/11, Berlin N. W. 7.—Der Weltbund für Kalenderreform, Dr. Rudolph Blochmann, Secy., 24 Lornsenstrasse, Kiel.

GREECE: Greek National Committee on Calendar Reform, Prof. S. Plakidis, Secy., Observatory of University of Athens.

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